

Briefly the main conclusion drawn from these remarkable experiments is that each sex possesses the factor for both sexes, but in different amounts according to the sex. Normally the factor for femaleness obtains an ascendancy over that for maleness and true females are produced. Thus there is introduced the conception of a struggle between two reactions in terms of time. In the abnormal cases where intersexuals are produced the factors for the opposite set act more quickly than usual and an intersex results. The earlier in development this "catching up" process occurs the more complete is the resulting intersex; until in extreme cases complete sex reversal is obtained.

The introduction of the time relation concept is of importance and has already proved fruitful in its application to the work of other observers, such as Crew and Huxley. It is doubtful, however, whether it has brought us much nearer to the *explanation* of sex production, and leaves unexplained the relation of hermaphroditism and unisexuality in animals.

There appears also to be a tendency for the author to push his time-relation factor a little too far in certain cases; and the giving of numerical values to the opposing principles, though useful for illustration, tends to give the reader a false idea of accuracy.

The book as a whole is well done and affords a clear and readable presentation of the latest facts concerning sex determination. The translator, too, has done his work well, though the word "fundament" as a translation of "anlage" seems particularly unsuitable. In subsequent editions it would be well to substitute a new word, or preferably leave "anlage" untranslated, since it is so well known to all biologists.

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Iansen, Dr. Murk, O.B.E., Prof. of Orthopaedic Surgery, Leiden.  
 FEEBLENESS OF GROWTH AND CONGENITAL DWARFISM. pp. 82.  
 With foreword by Sir Robert Jones.

"This book," as Sir R. Jones says in his foreword, "is an earnest endeavour to display the laws and rules by which a large number of deformities are determined, and in some cases, also the means by which they may be forestalled."

Though written from the point of view of medicine and surgery, it is of real interest to the eugenicist, for it traces back to foetal life and imperfect foetal environment many of the commonly observed disturbances of growth. Feebleness of growth depends upon the intensity rather than the quality of hurtful influences, but itself is a quantitative change in vital processes. The three leading principles are that "Feebleness of growth is proportional to the intensity of the nocivity; it is proportional to the rapidity of growth; it is characterised by enhanced sensibility and fatigability."

The noxious influences affect first the musculature; this becomes too weak to resist overgrowth of bony structures—hence children outgrowing their strength. A greater intensity of noxious influence retards the bony growth, first in the cartilage-centres, then in the

periosteum. Thus we get all degrees of enfeebled growth of muscle and bone, from the slight degrees of overgrown strength to the severer forms known as rickets, with thickened cartilages and curved bone-shafts. In many cases there is no other harmful influence traceable than maternal fatigue during pregnancy, the intensity increasing with successive periods of child-bearing. The tissues are affected in the order in which they make demands on the capacity for growth. The muscles come first—they make up 25% of body weight in the new born, but 43% in the adult. The skeleton rises from 14%—17%; while the skin sinks from 20%—18%. If, therefore, such noxious influences are brought about by maternal fatigue, it is obvious that great importance must attach to the environment, mental and bodily, of the mother during pregnancy, and also to the proper spacing of births. It is interesting to note that enforced rest—e.g., during appendicitis, may be of greater benefit than harm to the embryo, the presence of toxins doing less injury than the household drudgery would have brought about.

The degrees of retardation of bony growth are traced out and a reasoned account given of the different intensities of growth-damage. The normal type grows steadily—the long pull and the strong pull; in proportion to any initial weakness, there is greater sensibility, leading to sharper initial growth; and greater fatigability, causing early failure.

The author also deals with the internal organs, specially the brain and sexual glands. The 2nd part of the book deals particularly with Dwarfism and the syndrome of bony defects known as Cleida-cranial dysostosis. These are held to be due to amniotic intra-uterine pressure in the early weeks of pregnancy, and a good case is made for this hypothesis. The photographs and plates throughout are excellent.

The book is important, inasmuch as it grasps at a large portion of the root-causes of our C3 population; and suggestive, in that it stimulates inquiry as to the nutritional or toxic influences which injure, on the one hand, embryonic growth, and on the other, muscular and bony growth (including dental), during the first two years of life after birth. The presence of measles or whooping cough; the absence of vitamins and sunlight—it is a complex problem. Some day we shall know. We are getting there.

DOUGLAS WHITE.

**Marchant; Sir James, K.B.E. YOUTH AND RACE.** Fourth Report of the National Birth Rate Commission. Kegan Paul. London, 1923. pp. 378. 15s.

THIS volume is practically confined to the problems connected with education in sex hygiene and the social responsibility for the adolescent. The thirty-one witnesses were drawn from widely different sources. They comprised Educational and Welfare Workers and Representatives of the Church, Medicine, Science and a Metropolitan Magistrate. The evidence is therefore comprehensive and repays study.

As regards sex hygiene, the Commission was convinced that in-